

## **General Field Action CADD (FAC) Group Meeting**

2 September 2003

**Purpose:** The purpose of this meeting was to bring the Corps FAC groups and the CADD Center together to discuss the direction we are heading with regard to 3D technology and what effects this would have on the A/E/C level structure.

### **Participants:**

Garreth Clausen, Chair, Cost FAC (Walla Walla District)  
Dale Cottrell, Architectural FAC (Albuquerque District)  
Steve Hutsell, Architectural FAC (Fort Worth District)  
Glenn Kato, Chair, Geotechnical FAC (Transatlantic Center)  
John Kincaid, Chair, Systems FAC (Rock Island District)  
Cyndi Riley, Structural FAC (Little Rock District)  
Stan Shirk, Chair Architectural FAC (Omaha District)  
Steve Spangler, CADD/GIS Technology Center  
Lori Taylor, Chair, Structural FAC (St. Paul District)  
Kendall Waldie, Chair, Mechanical/Electrical FAC (Fort Worth District)

### **Discussion Items:**

1. One of the most common requests from districts is to make the level names less cryptic. The use of words instead of abbreviations was discussed. This would require NCS buy-off. The cryptic naming was needed in the past due to limitations imposed by MicroStation software. Utilize (in some order) a feature-function-material (level name structure. Discussed the possibility of using CSI descriptions used by Cost folks for level names. This would enable those responsible for specifications and cost estimates to query the design files. The use of IFC established names should also be considered; however, the IFC's primary intent is to help data move between platforms. This may not be applicable to level naming.
2. Possibly create a tiered level structure based on the complexity of the project. For example, simple projects would simple require a level named "joists." More complex projects may require more complex levels. This concept would require further discussion to determine how this would work for the cost and specifications folks.
3. Tie level names to words in the CSI nomenclature so that models can be more easily queried by cost and specifications.
4. The National CADD Standard does not yet address 3D modeling/objects. Any action we take with regard to deviating from the AIA or ISO naming conventions should be proposed to the NCS.
5. Defining a standard for object-based technology that doesn't yet exist would probably be ineffective. We could, however, identify what is important to us regarding this

technology and pass this on to the developers. For instance, identify what is important for objects to know or establish rules (i.e., a window is always suppose to be in a wall).

6. Use of level names vs. object properties was discussed. Would designing the level names so that they correlate with cost data be useful, or would it be better to make use of the database capabilities (i.e., attach tags to cells, etc.)?
7. Since object-based technology is still in its infancy, we need to identify what steps we should be taking in the transition period that will take advantage of current technology capabilities.
8. Apply level table changes could be applied to 3D modeling only. 2D modeling could continue to use A/E/C CADD Standard 2.0 level tables.
9. Self-healing and eliminating residual cleanup when a feature changes were identified as benefits of 3D modeling
10. Software-specific discussion:
  - a. Archicad – Architectural only. Uses long level names.
  - b. Triforma – Architectural product okay. Further software development required before HVAC and Structural useful. Until standard object libraries are available, widespread use would probably not be feasible.
  - c. Geopak Rebar – Requires 3D model in order to produce quantity schedules. Standard model development would be required to make it truly productive.
11. Determine whether or not a customer wants a 3D product. Can they use it?

**Action Items:**

1. Level tables should be combined so that there is a single level table for each discipline.
2. Each FAC should look at the level tables in their discipline and identify which levels would not be needed for 3D modeling.
3. The Corps will have to take the lead in directing changes to the National CADD Standard.
4. The CADD Detail Library should be reviewed to insure objects are available in the commercial market (MEANS). Include Cost folks in review.
5. A conference call will be set up to further discuss this topic at 10:00 a.m. (CDT) on 16 September 2003.